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EXAMINER

BELLO, AGUSTIN

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/886,153

Applicant(s)

GERSTEL ET AL.

Examiner

Agustin Bello

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-86 is/are pending in the application.
- 4a) Of the above claim(s) 5-9, 18-50, 53 and 59-71 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 10-17, 51, 52, 54-58 and 72-85 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/7/04, 12/19/01.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: IDS: 10/16/02.

DETAILED ACTION

Election/Restrictions

1. Claims 5-9, 18-50, 53, and 59-71 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11/26/04. Claims 5-9 and 53 recite subject matter that does not appear to read on the elected Figure 3. Even when Figure 8 is taken into consideration together with Figure 3, there appears to be a mismatch between what is shown in the figures and what is claimed. For example, substituting the contents of element 56 of Figure 8 for the element 56 in Figure 3 would not result in the claimed subject matter. For the purpose of the office action, the subject matter of claims 5-9 have not been examined since they do not appear to read on the elected species.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 84 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The applicant claims a computer readable program which is directed to non-statutory subject matter.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 13-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 13-17 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: a link between the monitor and controller for detecting the occurrence of a failure in at least one of the communication paths.

Drawings

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the at least one bidirectionally multiplexing/demultiplexing device, the entire contents of claims 5-9, and a connection between the transmission cables and the monitor must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the

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renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-4, 13-17, 51-52, 56-58, 72-83, and 85, *as best understood in view of the 35 USC §112 rejection above*, are rejected under 35 U.S.C. 102(e) as being anticipated by Sharma (U.S. Patent No. 5,986,783).

Regarding claims 1, 51, 72, Sharma teaches a communication network, comprising: a plurality of first communication paths (reference numeral 55 in Figure 6); a plurality of second communication paths (reference numeral 55 in Figure 6); and a plurality of nodes (reference numeral 50, 120 in Figure 6), adjacent ones of said nodes being coupled together through at least one of said first communication paths and at least one of said second communication paths (e.g. both working and protection path shown in Figure 6), each node comprising: a plurality of switches (reference numeral 120 Figure 7A), including a first switch (e.g. "West Network Ports" in Figure 7A) and a second switch (e.g. "East Network Ports" in Figure 7A), each having a first

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terminal (reference numeral 55aw in Figure 7A), a second terminal (reference numeral 55adp' in Figure 7A), a third terminal (reference numeral 55dap' in Figure 7A), and a fourth terminal (reference numeral 55adw in Figure 7A), wherein the first terminal and the second terminal of said first switch are coupled through at least one of said first communication paths and at least one of said second communication paths, respectively, to a first, adjacent one of the nodes (e.g. as indicated by 55daw and 55adp' in Figure 7A), the first terminal (reference numeral 55abw' in Figure 7A) and the second terminal (reference numeral 55bap' in Figure 7A) of said second switch are coupled through at least one other first communication path and at least one other second communication path, respectively, to a second, adjacent one of the nodes (e.g. as indicated by 55abw' and 55bap' in Figure 7A), and the third terminal of said first switch (reference numeral 55dap' in Figure 7A) is coupled to the third terminal of said second switch (reference numeral 55adp' in Figure 7A) through at least one third communication path; at least one multiplexing/demultiplexing device (reference numeral 122, 123 in Figure 6) bidirectionally coupled to each of an external communication node (reference numeral 50 in Figure 6) and the fourth terminal of each first (reference numeral 55adw in Figure 7A) and second switch (reference numeral 55baw' in Figure 7A), said at least one multiplexing/demultiplexing device for forwarding signals being communicated between the fourth terminals of said first and second switches (as seen in Figure 7A) and for forwarding signals being communicated between the external communication node and the fourth terminal of respective ones of said first and second switches (as seen in Figure 7A); and at least one controller (reference numeral 170 in Figure 13) coupled to said first and second switches, said at least one controller being responsive to applied input information (column 15 line 6 – column 16 line 3) for controlling at least one of said first

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and second switches to cause that at least one switch to selectively couple at least one of (a) the first and second adjacent nodes together by way of at least one of the first and second communication paths coupled to that at least one switch, and (b) the external communication node and at least one of the first and second, adjacent nodes by way of at least one of the first and second communication paths coupled to that at least one switch.

Regarding claim 2, Sharma teaches that each of said first and second switches is a 4X4 optical switch (as indicated by the 4 input 4 output nature of the Optical Switching Network (OSN) shown in Figure 7A).

Regarding claims 3, 52, 78, 79, 83, Sharma teaches said at least one multiplexing/demultiplexing device is a Wavelength- Division-Multiplexed (WDM) device (as indicated by “WDM λ Mux” in Figure 6).

Regarding claim 4, Sharma teaches that said at least one multiplexing/demultiplexing device includes at least one add/drop multiplexer/demultiplexer (reference numeral 50 in Figure 6).

Regarding claims 13, 56, 77, 82, and 85, Sharma teaches each node further comprises at least one monitor (column 15 lines 63-67) for detecting the occurrence of a failure in at least one of said first and second communication paths, and wherein said at least one monitor responds to detecting a failure in that at least one communication path by applying the input information to said at least one controller (e.g. “processor” in column 15 lines 63-67).

Regarding claim 14, Sharma teaches that said at least one monitor detects the occurrence of a failure in the at least one communication path by detecting the substantial absence of light in that path (e.g. “loss of signal” in column 15 lines 63-67).

Regarding claims 15, 16, 57, and 58, Sharma teaches said at least one controller is coupled to at least one of the other nodes of the communication network through at least one of said first and second communication paths (column 15 lines 62-67), and wherein said at least one controller is responsive to the input information being applied thereto by the at least one monitor for notifying the at least one other node of the detected failure by way of that at least one communication path (column 16 lines 1-3).

Regarding claims 17, 81, Sharma teaches that said plurality of nodes are coupled together through said first and second communication paths, and form a loop configuration (Figure 6).

Regarding claim 73, Sharma teaches the at least one communication path includes a plurality of communication paths (as seen in Figure 6, 7A), said at least one controller (reference numeral 170 in Figure 13) of at least one of said nodes is responsive to applied input information indicating that a failure has occurred in at least one of those communication paths (column 15 lines 62-67) for controlling at least one of said switches of that node to enable signals to be exchanged between at least one other, selected one of the communication paths and the multiplexing/demultiplexing device of that node by way of that at least one switch (as shown in the Figures 9-11).

Regarding claim 74, Sharma teaches that in a case in which the switches in first and second ones of the nodes are controlled for enabling signals to be exchanged with the at least one other, selected communication path, those signals also are exchanged between those first and second nodes by way of that at least one other, selected communication path (e.g. the protection path as shown in Figure 6).

Regarding claim 75, 80, Sharma teaches that a third one of the nodes (reference numeral 120d in Figure 14) is interposed in the at least one communication path between one side of the first node and one side of the second node, and wherein said controller of the first node controls at least one of said switches of the first node (inherent) and said controller of the second node controls at least one of said switches of the second node (inherent) to provide a loopback switching arrangement for enabling signals to be exchanged between the first and second nodes through the third node (as noted in Figure 3B and supported by Sharma as a ring-switch throughout and shown in Figure 14).

Regarding claim 76, Sharma teaches at least one controller (reference numeral 170 in Figure 13); at least one multiplexing/demultiplexing device (reference numeral 160, 180 in Figure 13) coupled to an external terminal; and a plurality of switches (reference numeral 150 in Figure 13), controllable by said at least one controller, for selectively coupling signals between said at least one multiplexing/demultiplexing device and the at least one external communication path, and for selectively coupling signals through said line node to and from the at least one external communication path, without forwarding those signals through said at least one multiplexing/demultiplexing device (e.g. "through path" and path through Amplifier/Regenerator shown in Figure 7A).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 10-12, 54-55, 86, are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharma.

Regarding claims 10-12, 54-55, 86, Sharma teaches fails to specifically teach the plurality of switch configurations claimed. However, Sharma does teach that any of number of switch connection configurations could be made in order to provide the required operation of the optical switching node (column 11 lines 46-48). Furthermore, Sharma teaches that the controller makes logical decisions on the operation of the optical switches based on failure information received or the detection of the loss of signal (column 15 line 50 – column 16 line 3). Moreover, it is apparent from Figure 3B that the “loop-back” switch function is well known in the art and supported by the system of Sharma as a “Ring-Switch” throughout. One skilled in the art would clearly have recognized from the disclosure of Sharma that a variety of switching configurations would have been possible including those claimed by the applicant. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to employ the claimed switch configurations in the system of Sharma.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AB


AGUSTIN BELLO
PATENT EXAMINER
02/25/05